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Fall 2021

## CHEM 125A-001: General Chemistry Lab I

Pin Gu

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THE DEPARTMENT OF CHEMISTRY AND ENVIRONMENTAL SCIENCE

**General Chemistry Lab I**  
**(Chem125A)**  
*Fall 2021 Course*  
*Syllabus*

**NJIT Academic Integrity Code:** All Students should be aware that the Department of Chemistry & Environmental Science (CES) takes the University Code on Academic Integrity at NJIT very seriously and enforces it strictly. This means that there must not be any forms of plagiarism, i.e., copying of homework, class projects, or lab assignments, or any form of cheating in quizzes and exams. Under the University Code on Academic Integrity, students are obligated to report any such activities to the Instructor.

**COURSE INFORMATION**

**Course Description:** General Chemistry Lab I is a laboratory course; it is designed to be taken currently with **CHEM 125**. Instructions are in the lab manual and concepts are from the text and lecture of the **CHEM 125** courses. The experiments are designed to provide undergraduate students with practical experience and train students with laboratory techniques/equipment common to chemistry laboratories.

**Number of Credits:** 1

**Course-Section, Instructors and Office Hours**

| Course-Section | Instructor | Email           | Office Hours     |
|----------------|------------|-----------------|------------------|
| 001            | Pin Gu     | Pin.gu@njit.edu | Monday 3 – 5pm   |
| 011            | Pin Gu     | Pin.gu@njit.edu | Monday 9 – 11am  |
| 017            | Pin Gu     | Pin.gu@njit.edu | Wednesday 9-11am |
| 023            | Pin Gu     | Pin.gu@njit.edu | Thursday 9-11am  |
| 103            | Pin Gu     | Pin.gu@njit.edu | Wednesday 1-3pm  |

**Required Textbook:**

|              |   |
|--------------|---|
| <b>Title</b> | CHEM 125A, General Chemistry Laboratory I |
|--------------|---|

|                  |               |
|------------------|---------------|
| <b>Author</b>    | R. W. Kluiber |
| <b>Edition</b>   | 9.3           |
| <b>Publisher</b> |               |
| <b>ISBN #</b>    |               |

**University-wide Withdrawal Date:** The last day to withdraw with a **W** is Wednesday, November 10, 2021. It will be strictly enforced.

### **Learning Outcomes:**

Upon completion of the course you should have a facility in accomplishing the following:

1. Comply with safety rules when working in chemistry laboratory.
2. Demonstrate the ability to use general chemistry laboratory equipment. Become proficient in basic chemical laboratory skills.
3. Demonstrate the ability to follow lab manual instructions to perform chemistry experiments.
4. Demonstrate the ability to use the knowledge of General Chemistry principles to solve the problem.
5. Improve logical reasoning ability and ability to analyze and integrate findings.
6. Develop practices in recording experimental procedures and data. Practice scientific writing by preparing laboratory reports.

### **Required materials:**

- Lab manual (available at NJIT bookstore).
- Safety goggles
- Disposable nitrile gloves
- Lab coat
- Face mask

### **POLICIES**

**All CES students must familiarize themselves with, and adhere to, all official university-wide student policies. CES takes these policies very seriously and enforces them strictly.**

### **Grading Policy:**

The final grade in this course will be determined as follows:

Lab Reports and Accuracy: 85%

Pre-lab Quiz: 10%

Cleanliness of lab bench and sink: 5%

**Grading scheme:**

|           |           |          |           |
|-----------|-----------|----------|-----------|
| <b>A</b>  | 90 - 100  | <b>C</b> | 70 - 74.5 |
| <b>B+</b> | 85 - 89.5 | <b>D</b> | 55 - 69.5 |
| <b>B</b>  | 80 - 84.5 | <b>F</b> | <55       |
| <b>C+</b> | 75 - 79.5 |          |           |

**Attendance Policy:**

- **Attendance is mandatory.** Students will be allowed only one make-up lab at the end of the semester. In the event that a student has a legitimate reason for missing a lab, the student should contact the Dean of the Students office and present written verifiable proof of the reason for missing the lab, e.g., a doctor's note, police report, court notice, etc. clearly stating the date AND time of the mitigating problem. The student must also notify the instructor through the Dean of the students. Two unexcused absences will result in an automatic failure.
- Students should sign the attendance sheet each week when arriving in lab.
- All experiments must be completed during the same lab period.
- A face covering will be required in the lab. You will NOT be allowed to enter the lab without wearing a face mask!

**Prelab quizzes:**

For each experiment, students must complete a pre-lab quiz in Canvas before the class. The completed pre-lab quiz accounts for 10% of each lab grade.

**Lab Reports:**

A lab report will be submitted for each experiment. The report consists of the completed data sheet found in the lab materials, plus a separate page containing your calculations. Each student should submit a lab report of his/her own work. For all experiments, lab reports must be handed in immediately following completion of the lab. **Late lab reports will not be accepted.**

**Working in Groups:**

- Students may perform experiments with **one or two** other persons. Any students found working in a group larger than **three** will receive a **zero** for that lab grade.
- Students working in groups must arrive at lab and begin the experiment **at the same time**. Students must remain in lab until the experiment is completed and the lab reports have been handed in.

- Students working in groups can perform the experiment together and work on calculations together, but each student must hand in a separate lab report, which includes data and calculations which are their own work.

### **Make-up Policy:**

The last week of the semester will be reserved for students to make-up a lab which was missed. At this time, students will be permitted to make-up **one experiment only**.

### **Cellular Phones:**

All cellular phones must be switched off during all class times.

### **Safety and Clean Up Policy:**

#### **• WEAR SAFETY GOGGLES AND FACE MASK AT ALL TIMES IN THE LABORATORY.**

- Clothing that covers your legs and shoulders are required. No shorts or short skirts.
- Everyone will be required to wear lab coats and gloves during each experiment.
- Closed shoes must be worn at all times. No sandals.
- Food or drink is not allowed in the lab.
- Turn off cell phones. Texting is not permitted in the lab.
- Properly dispose of waste materials.
- Cleanup your workspace at the end of each lab session and wash your hands prior to leaving the laboratory. 5% PENALTY WILL BE APPLIED TO YOUR LAB REPORT SCORE FOR FAILURE TO CLEAN UP PROPERLY!

### **ADDITIONAL RESOURCES**

**Chemistry Tutoring Center:** Located in the Central King Building, Lower Level, Rm. G12. Hours of operation are Monday – Friday 10:00 am - 6:00 pm. For further information please click [here](#).

**Accommodation of Disabilities:** Office of Accessibility Resources and Services (*formerly known as Disability Support Services*) offers long term and temporary accommodations for undergraduate, graduate and visiting students at NJIT.

If you are in need of accommodations due to a disability please contact Chantonette Lyles, Associate Director at the Office of Accessibility Resources and Services at 973-596-5417 or via email at [lyles@njit.edu](mailto:lyles@njit.edu). The office is located in Fenster Hall Room 260. A Letter of Accommodation Eligibility from the Office of Accessibility Resources Services office authorizing your accommodations will be required.

For further information regarding self-identification, the submission of medical documentation and additional support services provided please visit the Accessibility Resources and Services (OARS) website at:

- <http://www5.njit.edu/studentsuccess/disability-support-services/>

### Laboratory Schedule

Below is a tentative weekly schedule. We will try to stick to this schedule as closely as possible. Students will be notified of any changes from the syllabus throughout the course of the semester.

| Week | Experiment  |
|------|---|
| 1    | Check in, Introduction, and Safety                          |
| 2    | Measuring the Density of a Solid and a Liquid               |
| 3    | Determination of a Chemical Formula                         |
| 4    | Water of Hydration  |
| 5    | Identification of a Compound by Mass Relationship           |
| 6    | Analysis of Acidic Substances by Titration                  |
| 7    | Molecular Weight of a Volatile Liquid                       |
| 8    | Calorimetry: Experiments Based on Thermodynamics            |
| 9    | A Spectroscopic Analysis for Copper                         |
| 10   | The Solvay Process  |
| 11   | Paper Chromatography  |
| 12   | Molecular Weight Determination by Freezing Point Depression |
| 13   | No Class: Thanksgiving Recess                               |
| 14   | Make Up (One experiment only)                               |

*Updated by Pin Gu - August, 2021  
Department of Chemistry & Environmental Sciences*

(CES)  
Course Syllabus, Fall 2021